

REMARKS:

- 1) Referring to the "Office Action Summary" and the bottom of page 7 of the Office Action, the indication of allowable subject matter in claims 4, 13 and 14 is sincerely appreciated. For the reasons that will be discussed herein, it is respectfully submitted that present amended independent claim 1 also defines patentable subject matter.
- 2) Referring to item 10) in the "Office Action Summary", please indicate whether the original drawings have been approved by the Examiner.
- 3) Regarding item 12) in the "Office Action Summary", please acknowledge the priority claim and the receipt of the priority document of German patent application 103 07 957.2 submitted to the US Patent Office on May 24, 2004.
- 4) An IDS, Form PTO-1449, Form PTO-2038 (for the IDS fee), and copies of the two cited German references are enclosed. These German language references have been adequately discussed in the specification at pages 3, 8 and 9.
- 5) The claims have been amended to emphasize certain features as will be discussed below. Please note, the guides (3A, 115) as now defined in currently amended claim 1 are originally disclosed on page 9 lines 17 to 19 of the specification. The automatic cooperation of the grippers (7) with the latches (9) is

originally disclosed on page 9 lines 2 to 19 of the specification. These clarifications in claim 1 are also supported by the original description of Figs. 4A, 4B and 4C in the specification at page 12, line 17 to page 14 line 16.

- 6) Further, the specification has been editorially and formally amended. The proposed additional paragraph on page 16 of the specification is fully supported by original claim 14. This text to be inserted on page 16 of the specification merely provides support in the specification for the features of originally filed claim 14.
- 7) All rejections under 35 USC §102(b) and under 35 USC §103(a) are respectfully traversed for the following reasons.
- 8) As disclosed in the present specification on page 4, it is the aim of the invention to enable a vertical lift (71) that moves a receptacle (3) from one deck to another and back again, to engage and release that receptacle by an automatic motion sequence of a coupling and decoupling mechanism as a function of a vertical lift motion of the vertical lift (71) and as a function of an instantaneous position of the lift relative to the receptacle. More specifically, when a receptacle is resting on the floor (13) on the lower deck, and the lift (71) is supposed to bring that receptacle to the upper deck, the gripper mechanisms (7) of the lift shall be capable to automatically engage respective latches (9) of the receptacle. When engagement is complete, the lift moves the receptacle from one deck to the

other deck and disengagement of the receptacle from the lift is again automatically performed. In both instances, engagement and disengagement is performed automatically in response to the direction of movement and the instantaneous position of the lift (71) relative to the receptacle and relative to a stationary activating member (12) as now more clearly defined in currently amended claim 1. These clarifications in claim 1 are also supported by the original description of Figs. 4A, 4B and 4C in the specification at page 12, line 17 to page 14 line 16.

- 9) More specifically, the above objects have been achieved according to the invention in a vertical lift system for transporting a receptacle from one deck to another deck, which combines the following features comprising a vertically extending stationary lift shaft (5,6), a vertical lift (71) movable up and down in said stationary lift shaft, a stationary activating member (12) mounted in a fixed position in said stationary lift shaft, a number of gripper mechanisms (7) secured to said vertical lift (71) for gripping said receptacle, a number of latch elements (9) secured to said receptacle (3) in positions for engagement with said gripper mechanisms (7), guides (3A, 115) for aligning said gripper mechanisms with said latch elements in said positions for engagement, each gripper mechanism (7) comprising a lifting hook (10) for engaging a respective latch element (9) of said latch elements (9), a locking pawl (11) for locking said lifting hook in a latch element engaging position, and a mechanical coupling operatively interposed between said lifting hook (10) and said locking pawl (11) for automatically coupling

and decoupling said locking pawl (11) and said lifting hook (10) in response to a movement direction and an instantaneous position of said vertical lift (71) relative to said receptacle (3) and relative to said stationary activating member (12) for holding said lifting hook (10) in a latched position against forces tending to unhook said lifting hook (10) when said vertical lift (71) moves said receptacle (3) up or down, wherein said lifting hook (10) holds said receptacle (3) against horizontal forces, and wherein said locking pawl (11) holds said receptacle (3) against vertical forces.

10) The three references applied in support of the rejections made in the Office Action, taken singly do not disclose the combination of elements and functions now more clearly set forth in currently amended claim 1 and claims 2 to 14 remaining dependent on claim 1. The references taken in combination also would not have suggested the claimed combination of features for the following reasons.

11) The rejection of claims 1, 3 and 5 as being anticipated by Sonntag under 35 USC 102(b) is respectfully traversed. A reference to be anticipatory must disclose or inherently include all claimed elements within its own disclosure. Sonntag wants to make sure that the releasable load carrier, for example in a bomber aircraft, locks a bomb so that the bomb cannot be released by any unintended forces such as shaking or the like, whereby an intended release shall be possible even during unusual flight attitudes of the aircraft. Once the bombs are released,

"Sonntag's mechanism cannot reengage the bombs and pull them back into the aircraft, for example. Thus, neither the structure nor the function nor the combination of the structure and function as disclosed by Sonntag can anticipate present claim 1 and the claims remaining dependent on claim 1.

12) Further, with regard to Sonntag the Examiner is respectfully requested to explain how the "bell-crank", the cable 49 and the lifting arm 50 together form a "vertical lift system" for moving a container from one deck to the other. It is expressly disclosed in column 4 starting at line 40 of the Sonntag reference, that the pilot or operator will pull the cable 49 to operate the bell-crank lever to pull sleeve 40 against the force of spring 41 along a column 22 to release the bomb. The sleeve 40 has slots 43 in its lower end and slots 45 in its upper end. When the sleeve 40 has reached a sufficiently upward portion, the slots 43 permit locking teeth 35 to swing outwardly into the slots and the bomb will be released. How this release or rather dropping of the bomb is comparable to the operation of a lift or elevator that automatically carries loads from one deck to the other has not been explained in the Office Action.

13) With regard to claim 3, what the Office Action calls "the receptacle (28; see Figs. 3 and 4)" is actually an "upstanding stem 28 which is rigid with reservoir "b" for releasable support by column 22" (please see col. 2, lines 20 to 30 of the Sonntag disclosure). Therefore, the bomb carrying stem 28 of Sonntag is not a receptacle that is moved by a lift from one deck to another

deck. It is not seen what Sonntag's stem 28 has in common with present claim 3.

- 14) With regard to claim 5, Sonntag does not disclose any vertical lift because the so-called lifting sleeve 40 is merely raised against the spring 41 by the cable pull 49 so that the tooth 35 can slip out of the groove 38 and into the slot 43 (please see in conjunction, Figs. 3, 4 and 5 of the Sonntag disclosure).
- 15) The rejection of claims 1, 2 and 6 under 35 USC 102(b) as being anticipated by Brown et al. is respectfully traversed. With regard to present claim 1, the container restraint system of Brown et al. interlocks freight containers on an upper deck of a container carrier ship to prevent the containers from sliding off the upper deck of the ship. The container restraining system of Brown et al. is not capable of transporting containers from one deck to another. The system of Brown et al. interlocks containers in rows and columns and the locking must be accomplished manually by rotating a shaft 60. Therefore, Brown et al. does not anticipate present claims 1, 2 and 6.
- 16) With regard to claim 2, no independent protection is intended for positioning a latch in a corner of a container.
- 17) With regard to claim 6, Brown et al. do not achieve an automatic interlocking because even if certain of the stacking steps can be performed automatically, the final interlocking must be accomplished by an operator who is shown in Figure 1a and Figure

1b of the Brown et al. disclosure. The operator must rotate the shaft 60.

- 18) The rejection of claims 7, 8 and 9 as being obvious under 35 USC 103(a) in the light of Brown et al. taken in view of the disclosure of Sonntag is respectfully traversed.
- 19) With regard to claim 7, Sonntag does not disclose any lift system for transporting a load from one deck to another. The guide slot 43 in the sleeve (40) of Sonntag merely permits the tooth (35) to escape from the groove (38) when the sleeve (40) is lifted against the force of the spring (41) for releasing a bomb by pulling the cable (49). Such a bomb release mechanism cannot be compared with the structure defined in present claim 7 as currently amended because no bomb is lifted from one deck to another. Further, calling the guide slots (43) of Sonntag "stationary activating guide members" is contradicted by the express disclosure of Sonntag (see column 3 lines 1 to 43). The slots (43) are part of the sleeve (40). Sleeve (40) is raised or lowered. Therefore the slot (43) moves with the sleeve (40) and hence is not stationary.
- 20) The interpretation of the disclosure of Figure 6 of Brown et al. on page 5 of the Office Action is not supported by Brown et al., because the locking C-hook (66) of Brown et al. is not a lifting hook cooperating with an entraining element (please see column 9 line 13 to 31 of Brown et al.). Further, Brown et al. do not show an entraining element at all. The pawl (69) drives the

locking hook (66) out of the interlocking position and thus out of a locking engagement with the pawl (78) in response to rotation of the shaft (60) which drives the pawl (69) for the disengagement, while the tension spring (71) will return the locking hook (66) into a locking engagement with the pawl (78). As a result, the locking hook (66) pivots from a first position shown in solid lines to a second position shown in broken lines against the bias of the tension coil spring (71). The hook (66) retracts in response to the operation of the shaft (60) and disengages from an end hold (67A) in a corner cast in (67). The thus described structure and function of the container interlocking system of Brown et al. shows that combining anything disclosed by Brown et al. with the disclosure of Sonntag will not result in the claimed combination of elements set forth in present claim 7 as currently amended (as discussed above). Much less would there have been a suggestion to combine Brown et al. with Sonntag because the locking hook (66) of Brown et al. performs the same function as the teeth (35) of Sonntag, namely holding a load in place. Since the locking hook (66) of Brown et al. is very bulky, as needed for container interlocking on a ship, a person of ordinary skill in this art at the time the invention was made would not even have considered the combination contemplated in the Office Action. Aircraft structures must be as light weight as possible. More important, any combination of Sonntag and Brown et al. contemplated in the Office Action would not resemble the combination of features defined in claim 7 due to the above outlined differences between claim 7 and the references Brown et al. and Sonntag.

- 21) With regard to claim 8, the obviousness rejection applying Brown et al. in view of Sonntag is respectfully traversed because a combination of reset forces (141) and (142) as recited in claim 8 would not have resulted from the combination of the single biasing tension coil spring (71) (as shown in Figure 6 of Brown et al.) with the bomb release mechanism of Sonntag. Both the tension coil spring (71) of Brown et al. and the spring (41) of Sonntag perform the same function, namely to keep the respective hook (66) in Brown et al. or tooth (35) in Sonntag in an interlocking position. How such structure can suggest the combination of features as set forth in claim 8 (currently amended), has not been explained in the Office Action.
- 22) With regard to claim 9, no independent protection is intended for the use of springs as such for exerting a biasing force.
- 23) The rejection of claim 10 under 35 USC 103(a) in view of Brown et al. taken in the light of the disclosure of Barry is respectfully traversed for the following reasons. In section 12 on page 6 of the Office Action, it is admitted that Brown does not disclose a hook engagement guide ramp on which the hook can ride along into a latch recess. This is so because the system of Brown et al. does not require a guide ramp for its proper function. Thus, it would not have been obvious to a person of ordinary skill in this art at the time this invention was made, to use any sort of guide ramp. No guide ramp is needed, hence none would have been used. The above considerations with regard

to claim 10 also apply to the rejection of claim 11. Since Sonntag does not require any hook disengagement guide ramps, it would not have been obvious to a person of ordinary skill in the art at the time the invention was made to use such guide ramps even if Barry should disclose a guide ramp in its "complementary hook surface 32". The so-called complementary hook surface (32) of Barry does not serve as a disengagement guide ramp as expressly claimed in present claim 11.

- 24) The rejection of claim 12 under 35 USC 103(a) as obvious over Sonntag is respectfully traversed. It is not understood, why a tension scale incorporated into the disclosure of Sonntag would have made the features set forth in claim 12 obvious. Sonntag clearly does not need a tension scale for releasing a bomb from an aircraft. Therefore, it would not have been obvious to install such a scale into the structure of Sonntag. Additionally, even if it would have been obvious to install such a scale in the apparatus of Sonntag, the resulting combination would not have resembled any features defined in present claim 12 because the position indicator according to claim 12 is not a scale. Such a scale is not needed for the proper cooperation and function of the elements of claim 12. Therefore, no such scale would be used in a structure defined in claim 12.

[RESPONSE CONTINUES ON NEXT PAGE]

- 25) Favorable reconsideration and allowance of the application, including all present claims 1 to 14, are respectfully requested.

Respectfully submitted,
Christian BOE et al.
Applicant

WGF:he/4639
Enclosures:
Transmittal Cover Sheet
IDS
Form PTO-1449
Form PTO-2038
2 References
2 English abstracts
postcard

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